


PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant or agent's file number PE077	FOR FURTHER ACTION		See Form PCT/PEA/18
International application No. PCT/IB2004/001220	International filing date (day/month/year) 22.04.2004	Priority date (day/month/year) 23.04.2003	
International Patent Classification (IPC) or national classification and IPC F25G5/00			
Applicant ITEA S.P.A. et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 36 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u> </u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau a total of <u> </u> sheets, as follows:</p> <ul style="list-style-type: none"> <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing notifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in Item 4 of Box No. I and the Supplemental Box. <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of <u> </u> (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 602 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the opinion <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application 			
Date of submission of the demand 29.02.2005		Date of completion of this report 07.07.2005	
Name and mailing address of the international preliminary examining authority  European Patent Office 5-6-6334 Munich Tel. +49 89 2369 - 0 Fax: +49 89 2369 4445		Authorized Officer Thoma, G Telephone No. +49 89 2369-	

INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITYInternational application No.
PCT/IB2004/001220

JC20 Rec'd PCT/PTO 21 OCT 2005

Box No. 1 Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into one following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

Description, Pages

1-16 as originally filed

Claims, Numbers

1-25 as originally filed

Drawings, Sheets

1/1 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (specify):
- ☐ any table(s) related to sequence listing (specify):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (specify):
- ☐ any table(s) related to sequence listing (specify):

- If item 4 applies, some or all of these sheets may be marked "suppressed."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**International application No.
PCT/IB2004/001220

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2-4, 6-9, 11-13, 15-18, 20, 22-27
	No: Claims	1, 5, 10, 14, 16, 19, 21, 28
Inventive step (IS)	Yes: Claims	8, 9, 20
	No: Claims	2-4, 6, 7, 11-13, 15-18, 22-27
Industrial applicability (IA)	Yes: Claims	1-28
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

10/553784L

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/IB2004/001220

Reference is made to the following documents:

JC20 Rec'd PCT/PTO 21 OCT 2005

D1 US 4 925 389 A
D2 EP 0 416 533 A
D3 US 5 638 977 A
D4 US 5 309 850 A
D5 US 6 029 588 A

V. Statement according to Rule 43bis.1(a)(i) PCT

- 1) The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT. Document D1 (Fig.1, 6A, 6B and corresponding description) discloses a method for the treatment of materials with the same features :

- material to be treated and a combustion supporter comprising oxygen are supplied to an oxidation chamber (111, 113),
- gases produced during the oxidation of the material are discharged from the oxidation chamber,
- the material to be treated, which is introduced into the oxidation, and the products resulting from the oxidation are subjected to conditions of isothermy or quasi-isothermy (col.8, ln.58-65) at high or very high temperature (2200° to 3000° F), without substantial oxygen deficit, in any part of the chamber (col.8, ln.45-54).

Document D1 (Fig.1, 6A, 6B and corresponding description) also discloses the plant for treatment of materials of claim 14 :

- an oxidation chamber (111, 113) to which the material to be treated can be supplied and which includes an input (143, 161) for a combustion supporter comprising oxygen and an output (41) for the gases produced during the oxidation of the material inside the oxidation chamber (111, 113),
- the oxidation chamber is substantially isothermic or quasi-isothermic (col.8, ln.58-65) in use at high or very high temperature (2200° to 3000° F), and without substantial oxygen deficit, in all of its parts (col.8, ln.45-54).

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/IB2004/001220

Document D2 also discloses the subject-matter of claims 1 and 14. It should further be noted that the formulations in claims 1,14 whereby the oxidation chamber is in conditions of "isothermy or quasi isothermy", "substantially isothermic or quasi-isothermic" and "without substantial oxygen deficit" are very vague because no precise meaning is given to them in the application. Nor can a definite meaning of these formulations be derived from the prior art. Hence documents D4 and D5 must also be considered as anticipating the subject-matter of claims 1,14.

- 2) The subject-matter of claims 5,10,15,19,21,28 is also known from D1. The subject-matter of claims 5,10,18,21,28 is also known from D2. Hence the subject-matter of these claims is not new (Article 33(2) PCT). The subject-matter of claims 2-4,6,7 cannot be considered as inventive (Article 33(3) PCT) because the concept of recirculation combustion gases is well known in the prior art (see for example D3,D4,D5). A skilled person would thus use the teachings of D3 to externally recirculate combustion gases into the combustion air in the installation of D1 to reduce the NOx emissions therefrom. Claims 11-13,16-18,22-27 do not contain any features which, in combination with the features of any claim to which they refer, would confer them an inventive step according to Article 33(3) PCT.
- 3) The subject-matter of claims 8,9,20 are neither known from nor implied by the prior art cited in the search report. Hence the subject-matter of these claims appears to be new according to article 33(2) PCT and inventive according to article 33(3) PCT. Furthermore, the concept of injecting water into the recirculated combustion gases (see description, bottom of page 6 and top of page 7) is not known from or rendered obvious by the available prior art. Hence a suitably formulated claim (for example on the basis of claim 2) would also meet the requirements of Article 33(2) PCT (novelty) and Article 33(3) PCT (inventive step).
- 4) Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1,D2 are not mentioned in the description, nor are these documents identified therein.